

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A wiring member comprising:

a sheet-like porous substrate provided with a large number of open-cells which are three-dimensionally branched and opened to a first major surface as well as to a second major surface of the porous substrate, apertures of the open-cells on the first major surface having an average diameter and an ~~average number of the apertures~~ average aperture ratio, at least one of which is smaller than that of the second major surface; and

a conductive portion formed on the first major surface of the porous substrate and formed at least partially an inter-penetrating structure together with the porous substrate at an interface of the porous substrate;

wherein the average diameter of the apertures of the first major surface of the porous substrate is 20% or less of the average diameter of the apertures of the second major surface.

Claim 2 (Original): The wiring member according to claim 1, wherein the porous substrate is formed of an organic material.

Claim 3 (Original): The wiring member according to claim 1, wherein the porous substrate is formed of an inorganic material.

Claim 4 (Original): The wiring member according to claim 1, wherein the porous substrate is formed of a composite material containing an organic material and an inorganic material.

Claim 5 (Canceled):

Claim 6 (Previously Presented): The wiring member according to claim 1, wherein the average diameter of the apertures of the first major surface of the porous substrate is within a range of 1 to 100 nm.

Claim 7 (Previously Presented): The wiring member according to claim 1, wherein the average diameter of the apertures of the second major surface of the porous substrate is within a range of 0.5 to 10 μ m.

Claim 8 (Currently Amended): The wiring member according to claim 1, wherein the ~~average number of the apertures~~ average aperture ratio of the first major surface of the porous substrate is 80% or less of the ~~average number of the apertures~~ average aperture ratio of the second major surface.

Claim 9 (Currently Amended): The wiring member according to claim 8, wherein the ~~average number of the apertures~~ average aperture ratio of the first major surface of the porous substrate is within a range of 5 to 40% of the average number of the apertures of the second major surface.

Claim 10 (Currently Amended): The wiring member according to claim 8, wherein the ~~average number of the apertures~~ average aperture ratio of the second major surface of the porous substrate is within a range of 50 to 95%.

Claim 11 (Original): The wiring member according to claim 1, wherein the conductive portion includes an exposed portion which is exposed from the first major surface

of the porous substrate, and the inter-penetrating portion has a thickness which is 5 to 50% of the thickness of the exposed portion.

Claim 12 (Previously Presented): A method for manufacturing a wiring member comprising:

preparing a sheet-like porous substrate provided with a large number of open-cells which are three-dimensionally branched and opened to a first major surface as well as to a second major surface of the porous substrate, apertures of the first major surface having an average diameter and an average number of apertures, at least one of which is smaller than that of the second major surface;

coating a suspension comprising a dispersing medium and conductive fine particles dispersed in the dispersing medium on at least part of the first major surface;

permitting the dispersing medium of the suspension to penetrate into the porous substrate while permitting a portion of the conductive fine particles to remain on the first major surface, a residual portion of the conductive fine particles being permitted to penetrate into the open-cells; and

heat-treating the porous substrate having the conductive fine particles deposited on the first major surface and penetrated into the open-cells to sinter the conductive fine particles, thereby forming a conductive portion on the first major surface and forming at least partially an inter-penetrating structure between the conductive fine particles and the porous substrate;

wherein the average diameter of the apertures of the first major surface of the porous substrate is 20% or less of the average diameter of the apertures of the second major surface.

Claim 13 (Canceled):

Claim 14 (Previously Presented): The method for manufacturing a wiring member according to claim 12, wherein the average diameter of apertures of the first major surface of the porous substrate is within a range of 1 to 100 nm.

Claim 15 (Previously Presented): The method for manufacturing a wiring member according to claim 12, wherein the average number of apertures of the first major surface of the porous substrate is 80% or less of the average number of apertures of the second major surface.

Claim 16 (Previously Presented): The method for manufacturing a wiring member according to claim 15, wherein the average number of apertures of the first major surface of the porous substrate is within the range of 5 to 40% of the average number of the apertures of the second major surface.

Claim 17 (Original): The method for manufacturing a wiring member according to claim 12, wherein the conductive fine particles have a particle diameter ranging from 1 to 100 nm.

Claim 18 (Previously Presented): The method for manufacturing a wiring member according to claim 12, wherein the conductive fine particles have a particle diameter which is 10 to 100% of the average diameter of apertures of the first major surface of the porous substrate.

Claim 19 (Previously Presented): The method for manufacturing a wiring member according to claim 12, wherein the suspension is coated onto the first major surface by a screen printing method, an intaglio printing method or an ink jet printing method.

Claim 20 (Original): The method for manufacturing a wiring member according to claim 12, wherein the sintering of the conductive fine particles is performed for 30 minutes to 5 hours at a temperature ranging from 150 to 250°C.

Claim 21 (Previously Presented): A wiring member comprising:
a sheet-like porous substrate provided with a large number of open-cells which are three-dimensionally branched and opened to a first major surface as well as to a second major surface of the porous substrate, apertures of the open-cells on the first major surface having an average diameter and an average number of the apertures, at least one of which is smaller than that of the second major surface;
a conductive portion formed on the first major surface of the porous substrate and formed at least partially an inter-penetrating structure together with the porous substrate at an interface of the porous substrate; and
wherein the average number of the apertures of the first major surface of the porous substrate is 80% or less of the average number of the apertures of the second major surface.

Claim 22 (Previously Presented): The wiring member according to claim 21, wherein the porous substrate is formed of an organic material.

Claim 23 (Previously Presented): The wiring member according to claim 21, wherein the porous substrate is formed of an inorganic material.

Claim 24 (Previously Presented): The wiring member according to claim 21, wherein the porous substrate is formed of a composite material containing an organic material and an inorganic material.

Claim 25 (Previously Presented): The wiring member according to claim 21, wherein the average diameter of the apertures of the first major surface of the porous substrate is 20% or less of the average diameter of the apertures of the second major surface.

Claim 26 (Previously Presented): The wiring member according to claim 25, wherein the average diameter of the apertures of the first major surface of the porous substrate is within a range of 1 to 100 nm.

Claim 27 (Previously Presented): The wiring member according to claim 25, wherein the average diameter of the apertures of the second major surface of the porous substrate is within a range of 0.5 to 10 μ m.

Claim 28 (Previously Presented): The wiring member according to claim 21, wherein the average number of the apertures of the first major surface of the porous substrate is within a range of 5 to 40% of the average number of the apertures of the second major surface.

Claim 29 (Previously Presented): The wiring member according to claim 21, wherein the average number of the apertures of the second major surface of the porous substrate is within a range of 50 to 95%.

Claim 30 (Previously Presented): The wiring member according to claim 21, wherein the conductive portion includes an exposed portion which is exposed from the first major surface of the porous substrate, and the inter-penetrating portion has a thickness which is 5 to 50% of the thickness of the exposed portion.

Claim 31 (Previously Presented): A method for manufacturing a wiring member comprising:

preparing a sheet-like porous substrate provided with a large number of open-cells which are three-dimensionally branched and opened to a first major surface as well as to a second major surface of the porous substrate, apertures of the first major surface having an average diameter and an average number of apertures, at least one of which is smaller than that of the second major surface;

coating a suspension comprising a dispersing medium and conductive fine particles dispersed in the dispersing medium on at least part of the first major surface;

permitting the dispersing medium of the suspension to penetrate into the porous substrate while permitting a portion of the conductive fine particles to remain on the first major surface, a residual portion of the conductive fine particles being permitted to penetrate into the open-cells; and

heat-treating the porous substrate having the conductive fine particles deposited on the first major surface and penetrated into the open-cells to sinter the conductive fine particles, thereby forming a conductive portion on the first major surface and forming at least partially an inter-penetrating structure between the conductive fine particles and the porous substrate;

wherein the average number of the apertures of the first major surface of the porous substrate is 80% or less of the average number of the apertures of the second major surface.

Claim 32 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the average diameter of apertures of the first major surface of the porous substrate is 20% or less of the average diameter of apertures of the second major surface.

Claim 33 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the average diameter of apertures of the first major surface of the porous substrate is within a range of 1 to 100 nm.

Claim 34 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the average number of apertures of the first major surface of the porous substrate is within a range of 5 to 40% of the average number of the apertures of the second major surface.

Claim 35 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the conductive fine particles have a particle diameter ranging from 1 to 100 nm.

Claim 36 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the conductive fine particles have a particle diameter which is 10 to 100% of the average diameter of apertures of the first major surface of the porous substrate.

Claim 37 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the suspension is coated onto the first major surface by a screen printing method, an intaglio printing method or an ink jet printing method.

Claim 38 (Previously Presented): The method for manufacturing a wiring member according to claim 31, wherein the sintering of the conductive fine particles is performed for 30 minutes to 5 hours at a temperature ranging from 150 to 250°C.